



## Knowledge and Attitudes of Grape Growers about Grape Cultivation Practices in Distress Prone Area of Maharashtra State

### KEYWORDS

Knowledge, attitude, exploratory, grape

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**ABSTRACT** *The study was conducted in Chikhali Panchayat Samiti of Buldana district in Vidarbha region of Maharashtra state, having more concentration on grape cultivation in this Panchayat samiti (91.65 hectares). An exploratory research design of social research was used for the present investigation. The findings of the study revealed that, with regards to knowledge level, majority of the respondents (89.00%) were having high level of knowledge of grape cultivation while, few (11.00%) of the respondents were having medium level of knowledge. It is surprisingly to note that none of the respondents were observed in low level of knowledge category. In case of attitude of grape growers majority (63.00%) of the respondents exhibited favorable attitude towards scientific grape production practices followed by nearly one fifth (19.00%) of the respondents showed less favorable attitude towards scientific grape cultivation practices. However, only 18.00 per cent were having highly favorable attitude towards the grape production practices.*

### INTRODUCTION:

Grape cultivation is one of the most remunerative farming enterprises in India. Grape is grown under variety of soil and climatic condition in three distinct agro climatic zones, namely, sub tropical, hot tropical and mild tropical climatic zones in India. The botanical name of grape is *Vitis vinifera*. L. Family- Vitaceae and Origin Armenia near the Caspian Sea.

In India, total area under grape was 1,11,400 ha with annual production 12,34,900 tones during the year 2010-11. The major grape growing states in India are Maharashtra in the west, Karnataka, Andhra Pradesh and Tamilnadu in the south and Punjab, Haryana and Western Uttar Pradesh in the North.

In Maharashtra, area under grape cultivation during year 2010-11 was about 86,000 ha with annual production is about 7,74,000 tones per year. At present the cultivation of grape is mostly concentrated in five districts namely Nashik, Sangli, Solapur, Pune and Osmanabad and the area under cultivation is also in Buldana district of Vidarbha region.

In Maharashtra, viticulture industry is based on prominent commercial varieties of grape namely, Thompson seedless, Sharadseedless, Tas-e-ganesh, Maru, Sonaka, Manikchaman, Krishna and Bangalore purple.

The by- products from grapes are rasins, sweet juice, beverages, wine, dry fruits, manuka, kismis etc. which are the only processed products in India. Grape juice is rich in vitamin B and is a good source of vitamin C; the juice contains fruit sugar, fruit acid, minerals like calcium, phosphorus and iron, which play the role of health promoting ingredients in human diet. The juice is used on a large scale for preparing wine.

The soil and climate in Vidarbha region is suitable for grape cultivation but due to different constraints faced by the grape growers, it is not grown under large area and therefore area under grape is rapidly decreasing specially in Buldana district. The yield levels of grape in Vidarbha were found less because of lack of proper resource management and use of the traditional methods of cultivation. So, in order to boost up the production within the available range of resources,

farmers need to adopt new techniques of grape cultivation. Hence to know the reasons of low productivity of grape the present study was undertaken to know the knowledge and attitudes of the grape growers about grape cultivation practices.

### METHODOLOGY

The study was conducted in Chikhali Panchayat Samiti of Buldana district in Vidarbha region of Maharashtra state, having more concentration on grape cultivation in this Panchayat samiti (91.65 hectares)

### Selection of villages:

The list of villages having cultivation of grape was obtained from Taluka Agril. Office Chikhali. The villages having more area under grape cultivation were indentified, out of which 16 villages were selected purposively. The villages selected were namely, Chikhali, Sawrgaon (Dukare), Chandhai, Palaskhed (Daulat), Kavala, Mangrul (Navghre), Divthana, Amdapur, Undri, Godri, Shelgaon atoll, Mangrula (Isrul), Peth, Kinhola, Bramhapuri, Malshemba.

### Selection of respondents

A list of grape growers whose orchards were in bearing stage was prepared from each of selected village and all these grape growers were selected as universe or population for the study to constitute sample size of 100 respondents.

### Measurement of Knowledge

In the present study, knowledge has been operationally defined as body of understood information possessed by an individual grape grower about grape cultivation practices. A teacher made knowledge test having questions related to Grape cultivation was framed to measure the knowledge of individual grape grower. There are twenty sub practices under sixteen major practices. Responses on different practices of individual respondent was ascertained on two point continuum i.e. yes or no with score 2 and 1. The score of all atoms were added together and considered as an individual score. On the basis of knowledge score of individual the knowledge index was calculated by using following formula.

$$\text{Knowledge Index} = \frac{\text{Actual obtained Knowledge score}}{\text{Maximum obtainable Knowledge score}} \times 100$$

**Measurement of Attitude:**

It is operationally defined as an extent of positive or negative reaction of grape growers towards scientific production of grape.

The teacher made test was used to measure attitude. The added attitude score of each individual then was converted into attitude index by using formula

$$\text{Attitude index} = \frac{\text{Actually obtained score}}{\text{maximum obtainable score by the respondents}} \times 100$$

Finally by using attitude index individual respondents was categorized into three categories as under on equal interval basis as less favorable, favorable and highly favorable.

**Results and Discussions**

**Table 1: Distribution of respondents according to their practice and sub practice wise extent of knowledge about recommended package of practices of grape.**

Sr. No.	Recommended cultivation practices of grape	Respondents (N=100)	
		Frequency	Percentage
A.	Land preparation (Ploughing, Harrowing, etc.)		
i)	Type of soil recommended for cultivation of grape. (light, friable loamy soils, freed rainage, etc.)	98	98.00
ii)	Practices necessary for land preparation. (traditional, mechanical)	92	92.00
B.	Variety		
i)	Varieties of grape recommended for cultivation in study area. (Sonaka, Sharad etc.)	91	91.00
ii)	Quality characteristic of recommended variety of grape (i.e. wine, manuka, sweet juice, etc.)	82	82.00
C.	Propagation		
i)	Propagation method generally use in study area. (Cuttings, etc.)	75	75.00
D.	Planting		
i)	Suitable planting time recommended for grape crop. (January and February)	80	80.00
ii)	Planting depth for grape crop. (50-75 cm)	67	67.00
E.	Spacing		
i)	Recommended spacing for grape crop. (3.0 x 1.5 m, 3.0 x 1.4, etc.)	59	59.00
ii)	Optimum grapevine population of grape crop. (2200, 2380, etc.)	73	73.00
F.	Training		
i)	Type of training recommended in grape crop. (Head system, pergola system, etc.)	70	70.00
G.	Pruning		
i)	Suitable time for pruning in grape crop. (April, October pruning)	68	68.00
H.	Organic manure		
i)	Recommended dose of FYM per hectare for grape crop. (90-100 CL)	50	50.00
ii)	Suitable time of FYM application in grape crop. (complete growth of orchard)	69	69.00
I.	Fertilizer application		
i)	Recommended dose of fertilizer per hectare. (900 kg N : 500 kg P <sub>2</sub> O <sub>5</sub> : 700 kg K <sub>2</sub> O)	62	62.00

J.	Irrigation		
i)	Recommended time for irrigation of grape.	85	85.00
ii)	Suitable method of irrigation use in this area.	86	86.00
K.	Growth regulator		
i)	Growth regulator used for dipping, spraying (GA, NAA)	73	73.00
ii)	Number dipping in one season. (2-3)	83	83.00
L.	Girdling		
i)	Knowledge about girdling practices.	69	69.00
M.	Thinning		
i)	Method used for thinning. (manual or chemical)	72	72.00
N.	Plant protection		
i)	Major pests of grape crop. (chafer beetle, thrips)	75	75.00
ii)	Insecticide recommended for control of pests (0.05% malathion, Seedless tolerant var.)	84	84.00
iii)	Major diseases of grape crop. (Powdery mildew, Downy mildew)	73	73.00
iv)	Chemical recommended for control of major disease. (Sulphur, Bordeaux mix.)	87	87.00
O.	Harvesting		
i)	Appropriate stage of harvesting of grape crop. (February, March)	75	75.00
P.	Marketing		
i)	Size suitable for marketing of grapes. (Large, etc.)	32	32.00

From Table 1, it is revealed that, with respect to land preparation large majority of the respondents (98.00%) and (92.00%) were having knowledge about type of soil selection of grape cultivation and practices necessary for land preparation respectively.

In case of variety use, great majority of respondents (91.00%) were having knowledge about varieties recommended in the study area whereas, 82.00 per cent of them were having knowledge about characteristics of recommended varieties.

With regards to propagation, planting and spacing, 75.00 per cent of the respondents possessed knowledge about propagation, whereas in case of planting 80.00 per cent of the respondents were having knowledge about suitable planting time (January and February) and knowledge about planting depth for grapes (50 to 75 cm) possessed by 67.00 per cent of the respondents. As concerned to spacing, the respondents (59.00%) and (73.00%) were having knowledge about recommended spacing and optimum grape vine population respectively.

The majority of the respondents (70.00%) and (68.00%) possessed knowledge about type of training and pruning time respectively.

As concerned to the organic manures, maximum number of the respondents (50.00%) and (69.00%) were having knowledge of recommended dose of FYM and suitable time of application respectively.

With respect to fertilizer application majority (62.00%) of the respondents possessed knowledge about recommended dose of fertilizers.

The large majority of the respondents (85.00%) and (86.00%) were possessed knowledge about recommended time of irrigation and suitable method of irrigation in the study area respectively.

As regards to dipping or spraying, great majority (73.00%)

and (83.00%) of the respondents were having knowledge about the growth regulator use (GA, NAA) and numbers of dipping in one season (2-3) respectively.

The maximum numbers of the respondents (72.00%) were having knowledge of method used for thinning and 69.00 per cent of them possessed the knowledge about girdling practices.

In case of plant protection, majority of the respondents (75.00%), (84.00%), (73.00%) and (87.00%) were possessed knowledge about major pests of grapes (chafer beetle, thrips), insecticides recommended for control of pests, major disease (powdery mildew, downy mildew) and chemical recommended for control of disease (Sulphur, Bordeaux mixture) respectively.

As regards harvesting and marketing, 75.00 per cent and 32.00 per cent of the respondents were having knowledge about appropriate stage of harvesting of grape (Feb., March) and size suitable for marketing (large).

**Table 2: Distribution of respondents according to their knowledge levels**

Sr. No.	Knowledge level	Respondents (n=100)	
		Number	Percentage
1.	Low	00	00.00
2.	Medium	11	11.00
3.	High	89	89.00
	Total	100	100.00

It is seen from Table 2, majority of the respondents (89.00%) were having high level of knowledge of grape cultivation while, few (11.00%) of the respondents were having medium level of knowledge. It is surprisingly to note that none of the respondents were observed in low level of knowledge category.

These findings were in conformity with the findings of Pawar (2001) and Waman (2002), Sorate (2011)

**Attitude**

**Table 3: Distribution of the respondents according to their attitude towards scientific production of grape.**

Sr.No.	Statements	AG	UD	DA
1	Grape cultivation is beneficial over other field crops	72	23	05
2	Grape cultivation is risky than the other crops	69	17	14
3	There are large limitations on the grape cultivation	57	35	08
4	Grape cultivation required technical skill	81	16	03
5	One can get more profit if he/she undertake take grape cultivation	42	29	29
6	I don't consider grape cultivation as creditable income generation	23	38	39
7	Grape cultivation is not possible to ordinary farmer	25	49	26
8	Grape cultivation required high initial cost	48	34	18
9	Grape growing has helped to the rural youths in increasing the employment status in rural area	24	48	28

**AG- Agree UD- Undecided DA- Disagree**  
 ( \* The selected respondents were 100 numbers, hence value of percentage is same as that of value of frequency)

From table 3 it is revealed that majority of respondents were agreed with the statements that, Grape cultivation required

technical skill (81.00%), followed by Grape cultivation is beneficial over other field crops (72.00%), Grape cultivation is risky than the other crops (69.00%), There are large limitations on the grape cultivation (57.00%), Grape cultivation required high initial cost (48.00%), One can get more profit if he/she undertake take grape cultivation (42.00%), Grape cultivation is not possible to ordinary farmer (25.00%), Grape growing has helped in the rural youths in increasing the employment status in rural area (24.00%), I don't consider grape cultivation as creditable income generation (23.00%).

It is also evident from the data depicted in table 3 that moderate of the respondents undecided with the statement that, Grape cultivation is not possible to ordinary farmer (49.00%), followed by Grape growing has helped in the rural youths in increasing the employment status in rural area (48.00%), I don't consider grape cultivation as creditable income generation (38.00%), There are large limitations on the grape cultivation (35.00%), Grape cultivation required high initial cost (34.00%), One can get more profit if he/she undertake take grape cultivation (29.00%), Grape cultivation is beneficial over other field crops (23.00%), Grape cultivation is risky than the other crops (17.00%), Grape cultivation required technical skill (16.00%).

With regards to disagree feelings ,it is revealed that relatively less proportion of respondents were said that , I don't consider grape cultivation as creditable income generation (39.00%), followed by one can get more profit if he/she undertake take grape cultivation (29.00%), Grape growing has helped in the rural youths in increasing the employment status in rural area (28.00%), Grape cultivation is not possible to ordinary farmer (26.00%), Grape cultivation required high initial cost (18.00%), Grape cultivation is risky than the other crops (14.00%), There are large limitations on the grape cultivation (8.00%), Grape cultivation is beneficial over other field crops (5.00%),Grape cultivation required technical skill (3.00%).

Collectively, it could be said that, grape growers were having somewhat favorable attitude towards grape cultivation.

**Table 4: Distribution of the respondents according to their Attitude towards scientific production of grape.**

Sr. No.	Attitude levels	Respondents (n=100)	
		Number	Percentage
1.	Less favorable	19	19.00
2.	Favorable	63	63.00
3.	Highly favorable	18	18.00
	Total	100	100.00

It is seen from Table 4 majority (63.00%) of the respondents exhibited favorable attitude towards scientific grape production practices followed by nearly one fifth (19.00%) of the respondents showed less favorable attitude towards scientific grape cultivation practices. However, only 18.00 per cent were having highly favorable attitude towards the grape production practices.

These findings were in conformity with the findings of More (2002) and Bite (2009).

**Conclusion:**

In case of knowledge large majority (89.00) were in high level followed by favorable attitude reported by 63.00 per cent. From these findings it may be concluded that, though the grape growers were having high knowledge level, but the adoption behaviour was observed in medium level. This may be due to the constraints like high wages of labour, non availability of timely labours, fluctuation in market, inadequate sources of finance and low rainfall or irrigation facilities etc.

This tends to concluded that farmers should have to plan about the availability of labours. Secondly, government should provide loan facilities particularly to grape growers at low interest rate so that more numbers of farmers can be motivated towards grape cultivation.

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